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| 09/509,232      | 11/06/2000  | Wolfgang Buerger     | GT/83               | 9676             |

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| EXAMINER |
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LEWIS, BEN

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| ART UNIT | PAPER NUMBER |
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1795

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04/16/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/509,232 | <b>Applicant(s)</b><br>BUERGER ET AL. |  |
|                              | <b>Examiner</b><br>Ben Lewis         | <b>Art Unit</b><br>1795               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 9<sup>th</sup>, 2009 has been entered.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 31 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation "*wherein said second substance does not fill said pores*" in the independent claims is new matter because applicant did not explicitly exclude filling of the pores with said second substance in the original disclosure.

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MPEP 2173.05(j) states that:

Any negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims. See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977) (“[the] specification, having described the whole, necessarily described the part remaining.”). See also *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), *aff’d mem.*, 738 F.2d 453 (Fed. Cir. 1984). The mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Applicant’s specification states that: *“It is also within the scope of the invention to give the porous carrier material a multilayer design. One can use a sandwich of a porous fluoropolymer membrane with an ionconductive membrane or a system comprising a porous fluoropolymer membrane, a conventional ion-conductive membrane and a further porous fluoropolymer membrane. The conventional ion-conductive membrane can be e.g. a filled plastic membrane, the membrane being filled e.g. with perfluorinated ionomers, e.g. from a copolymer of tetrafluoroethylene and perfluorovinylether with terminal sulfonic acid groups, or e.g. with doped ZrO<sub>2</sub>. The use of such a system or sandwich additionally improves the ion flow in such a conventional membrane between the electrodes. Symmetrical or asymmetrical membranes can be used. The perfluorinated surface-active substance can be applied to or incorporated in*

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*the porous material by rolls, a dipping bath, spray technology and further known methods. Perfluorinated surface-active substance can also be present in the electrolyte and washed into the porous material therewith. Due to the low surface tension of the surface-active substance a monolayer of the compound can already suffice. This has the advantage that even extremely small-pore fluoropolymer membranes can be sufficiently hydrophiled without the pore structure being sealed. After treatment with the perfluorinated surface-active substance the porous fluoropolymer is preferably coated at least partly on the inner surface. However it is also within the scope of the invention to produce by the treatment an at least partial coating on both the inner and outer surfaces. The inner and outer surfaces of the porous fluoropolymer are preferably covered completely with the perfluorinated surface-active substance. Initial porosity of the fluoropolymer and mean pore size are maintained.” (Pages 13/14).*

Examiner notes that a recitation or support for “*wherein said second substance does not fill said pores*” is not present in Applicant’s specification as originally filed.

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (EP 0 718903) in view of Branca et al. (U.S. Patent No. 5,814,405).

With respect to claim 31, Kato et al teaches an electrochemical energy storage device comprising at least two electrodes, an electrolyte, and a porous carrier material (expanded PTFE) for the electrolyte having an inner pore structure in which a perfluorinated surface-active substance is present disposed between the electrodes. (Col. 1, lines 3-5; Col 3, lines 11-25, 35-38; Col. 4, lines 33-47; Col 6, lines 36-47 [note ion exchange/electrolyte resin is the perfluorocarbon-based ion exchange resin filled in pores]). However, Kato fails to disclose a carrier material inner pore structure consisting essentially of a series of highly elongated nodes with an aspect ratio of 25:1 or greater that are generally aligned in parallel that are interconnected by fibrils. Branca teaches an expanded PTFE (ePTFE) useful in electronic products and as support layers in composite constructions that is much less sensitive to changes in temperature and more uniform than prior art ePTFE. This ePTFE has an internal microstructure consisting essentially of a series of nodes interconnected by fibrils, said nodes generally aligned in parallel, being highly elongated and having an aspect ratio of 25:1 or greater.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the ePTFE as taught by Branca et al. as the carrier material in the electrochemical storage device as taught by Kato et al. because it

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has a uniform microstructure, is useful in electronic products, and is less sensitive to changes in temperature that may occur in an electrochemical energy storage device.

With regard to a second perfluorinated surface-active substance different from said first electrolyte being present, Branca et al. teach that in another embodiment, one paste extruded tape or membrane can be layered, with another paste extruded tape or membrane to produce an asymmetric composite form of the invention in which the node-fibril microstructure is different on one side as opposed to the other. Lamination is achieved by preparing an extrudate of each membrane and rolling down as described further above; and then combining the two membranes into layers, followed by calendaring, drying, and the stretching, sintering, and stretching again, all as described further above (Col 3 lines 60-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the composite structure as taught by Branca et al. as the carrier material in the electrochemical storage device as taught by Kato et al. because Branca et al. teach that the resulting ePTFE articles are extremely uniform and possess a unique microstructure characterized as having highly elongated nodes interconnected by fibrils. The resulting articles also have a unique set of physical properties including high strength and low resistance to fluid flow (Col 4 lines 3-13).

Examiner notes that lamination is a coating operation and in the case of the prior art, the lamination of a second carrier layer of ePTFE material as taught by Branca et al. reads on applicants limitation of "wherein said surfaces are coated at least partly with a layer of a second perfluorinated surface-active substance different from said first

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electrolyte." Examiner also notes that since the other embodiment of Branca et al. is a composite structure which includes a second perfluorinated substance composite and the composite structure includes the node-fibril microstructure which are contained in the inner pores of Branca et al. then the inner pore surfaces of Branca et al. are at least partly coated with the second perfluorinated material of Branca et al.

### **Double Patenting**

5. Claim 31 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 15 of U.S. Patent No. 6,613,203 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because both instant claim 31 and conflicting claim 15 patent essentially describe a membrane electrode assembly formed of expanded polytetrafluoroethylene (ePTFE) with a structure including nodes aligned in parallel and interconnected with fibrils, such that the nodes have an aspect ratio of 25:1 or greater. In both the prior art and the instant invention, the nodes are filled with a material permeable to ions. Although the patent claim 15 and instant claim 31 do not use identical language, one of ordinary skill in the art would understand that: "expanded PTFE" recited in the .203 patent is the "carrier material for the electrolyte" recited in instant claim 31, and "electrolytes" and "perfluorinated surface active substances" recited in instant claim 31



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encompass the "ion exchange material" required by claim 1 of the .203 patent, which could function as the electrolyte. Additionally, the perfluorinated surface-active agent of the instant invention is capable of ion exchange and can function as an electrolyte.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben Lewis whose telephone number is 571-272-6481. The examiner can normally be reached on 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ben Lewis/

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Examiner, Art Unit 1795

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795